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Title PERFORMANCE TESTS OF THE LCA - ECS HEAT EXCHANGER DUCT WITH SIMULATION OF PRIMARY HEAT EXCHANGER PRESSURE DROP

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Abstract

Total pressure drop in the inlet and outlet ducting of the LCA-ECS primary heat exchanger were determined corresponding to flight Mach numbers upto 0.86. A suitable screen/ wire mesh was selected whose pressure loss characteristics matched with those of the primary heat exchanger being procured for use with LCA. The flow through the duct at low inlet Mach numbers was augmented using a suitable ejector. The inlet duct pressure loss was found to be nearly 60% higher than that due to the heat exchanger alone. The ram air and ejector air temperatures were simulated as per flight conditions and their effects were studied.